

Work Order ID 81114

March-08-12 8:51:44 AM

81114

Page 1

Item ID: D3391-025

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Aft Tube Assembly

Start Date: 08/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLTDate: 12/03/09 Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3391

I

100

0.00

100

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

Turn as per Folio FA599

Rev: AA & Dwg D3391 Rev: I

scribe batch # on fwd end at 90 degree

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

111

0.00

111

QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

INSPECT INSIDE BORE

1 ϕ

mm.L 12/03/19

1 ϕ

mm.L 12/03/19

1 ϕ

12/03/19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Page 2

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Item ID: D3391-025 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Aft Tube Assembly
 Start Date: 08/03/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 22/03/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	HAAS CNC VERTICAL MACHINING #1	0.00							
120									
HAAS I	Memo	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA 599 Rev: <u>AA</u> & Dwg D3391 Rev: <u>I</u> 2-Deburr								
130	QC2- Inspect parts off machine FAI/FAIB	0.00							
130									
QC	Memo	0.00							
Quality Control									
140	QC8- Inspect parts - second check	0.00							
140									
QC	Memo	0.00							
Quality Control	***INSPECT INSIDE BORE***								

1 0
12/03/14 21

1 0

12/03/14 21

12/03/26

1 0

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 3

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150		0.00							
150	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	1-Drill (PILOT HOLE) aft cap holes per Dwg D3391 using DT8803								
160		0.00							
160	BENDING MACHINE - SKIDTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	Form as per Dwg D3391 Using Bend Prog 3391025								
170		0.00							
170	QC5- Inspect part completeness to step on W/O								
QC	Memo	0.00							
Quality Control									

OK 12-3-27

DC 12/03/27

3.96"

DP 12-3-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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1

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1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

0.00

180

Skidtubes

0.00

Skidtubes

Memo

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill float bag holes using DT8809 as per Dwg D3391(Holes marked "A" Only.

3-Drill wearplate holes as per Dwg D3391 using DT8878(Mid Tube) & DT8217
Wearplate Jig.

*****Do Not Open To Finished Size*****

4-Drill Wearshoe holes as per DWG D3391 using DT8939 locating from 2
previously drilled aft wearplate holes.

5-Open wearplate holes to 0.250" and c'bore as per dwg D3391

6-Open up all wearshoe, wearplate to 0.297" and float bag holes to 0.328" as per
Dwg D3391.

7-Deburr

DL 12/04/02

DL 12/04/03

Dart Aerospace Ltd

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Page 5

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Stop ***NS2***

Start Date: 08/03/2012 Start Qty: 1.00 ***1***
Required Date: 22/03/2012 Req'd Qty: 1.00 ***1***

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							
200 *200* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00							
210 *210* QC Quality Control	QC3- Inspect Part Finish QC7 Memo	0.00 0.00							

5/12/12

7/6 12-4-3

DP 12-4-3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 6

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 08/03/2012 **Start Qty:** 1.00 ***1***

Cust Item ID:

Required Date: 22/03/2012: **Req'd Qty:** 1.00 *** 1 ***

Customer:

Reference:

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220 0.00

220

Skidtubes

Skidtubes

Memo

Skidtubes

Instal spacers as per dwg D3391
A/R Magnabond 6398 Batch: 120666
exp. date : 13-1-30
cure time 12hrs as per QSI0015

230	QC5- Inspect part completeness to step on W/O	0.00
-----	---	------

230

QC

Memo

Quality Control

235	Pressure Wash per QSI005 4.3	0.00
-----	------------------------------	------

235

HandFinish

Memo

Hand Finishing

AND REALODINE AS PER PAR09-043

De 12/04/04

8-264/05

182 m.f 12/04/05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 7

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Start Date: 08/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

240

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

240

Powdercoat

Memo

0.00

Powder Coating

START TIME: 10h15
OVEN TEMPERATURE: 320°F
FINISH TIME: 10h45

m120222

1 x 8 28 14/04/06.

250

QC3- Inspect Part Finish

0.00

250

QC

Memo

0.00

Quality Control

1 x 6 24 12/04/10

260

HandFinishing

0.00

260

HandFinish

Memo

0.00

Hand Finishing

1-Install inserts as per Dwg D3391
2-Install Aft Cap as per Dwg D3391
A/R Sikaflex-241/-291 11/20318
Sikaflex expiry date: 12/08

3- INSTALL WEARPLATES AS PER DWG

1 x 6 24 12/04/10

W/O:		WORK ORDER CHANGES					
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 Item Name: Aft Tube Assembly
 Start Date: 08/03/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 22/03/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270	QC5- Inspect part completeness to step on W/O	0.00							
270		0.00							
QC	Memo	0.00							
Quality Control									
280	Identify as per dwg & Stock Location: <u>w/o</u>	0.00							
280		0.00							
Packaging	Memo	0.00							
Packaging									
290	QC21- Final Inspection - Work Order Release	0.00							
290		0.00							
QC	Memo	0.00							
Quality Control									

12/4/12

12-04-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Picklist Print

March-08-12 8:51:49 AM

Page 1

Work Order ID: 81114

81114

Parent Item: D3391-025

D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev B 06-02-07 ECN773 dwg rev. D EC
IPP Rev:C 06-03-28 Update Manuf. Instructions JLM
IPP rev D 07.03.20 revF dwg EC
IPP rev E 07.11.07 rev G dwg ecn 1053p EC verified by: DD
IPP Rev:F 07-11-13 ECN 1056 DD verified by: EC
IPP Rev:G 08-09-10 revH as per dwg DD verified by:EC IPP Rev:H
11.11.14 AS PER REV.I DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4095-047

Manufactured

No

260

Each

19.0000

1

1

D4095-047

Wearpad Assembly

**

12/03/10 x1

Location

Loc Qty

Loc Code

FP002

19

78325

5

80703

14

D4095-049

Manufactured

No

260

Each

15.0000

1

1

D4095-049

Wearpad Assembly

**

12/03/10

Location

Loc Qty

Loc Code

FP002

15

80704

15

D6014-090

Manufactured

No

100

Each

43.0000

1

1

D6014-090

ALUMINUM EXTRUSION

**

Location

Loc Qty

Loc Code

LG

43

77332

43

12/03/15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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81114

Parent Item: D3391-025

D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3670-4-200

Manufactured No

230

Each

63.0000

4

4

D3670-4-200

SPACER

**

PC 12/04/04

Location

B90360

Loc Qty

Loc Code

LG001

63

72851

3

77500

4

78606

56

D2646

Manufactured No

270

Each

146.0000

1

1

D2646

Aft Cap

**

el 12/04/10

Location

Loc Qty

Loc Code

FP002

146

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

78018

33

79500

47

79562

50

x1

D3672-1

Manufactured No

270

Each

1,294.000

2

2

D3672-1

Phenolic Washer

**

el 12/04/10

Location

Loc Qty

Loc Code

FP001

242

66821

242

ST060

1052

72229

52

76277

500

80369

500

y1

W/O:		WORK ORDER CHANGES					
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D3391-025

Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

260

Each

4,855.000

14

14

AI S4-1032-130

Insert

**

14

12/04/10

Location

Loc Qty

Loc Code

ST280

681

119084

116

120671

565

ST281

4174

120410

174

120807

2000

120837

2000

x20

ALS4-1032-225

Purchased

No

270

Each

1,194.000

8

8

AI S4-1032-225

Insert

**

8

12/04/10

Location

Loc Qty

Loc Code

ST281

1031

108696

146

110768

62

118386

55

118966

68

120671

700

ST282

163

120410

150

120451

13

x8

W/O:		WORK ORDER CHANGES					
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Parent Item Name: Aft Tube Assembly

Start Date: 08/03/2012

Required Date: 22/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No

270 Each

3,729.000 6 6

AN3C4A

BOLT

**

yl 12/04/10

Location

Loc Qty

Loc Code

ST350

3729

117688

5

118112

16

119749

10

120187

2000

120423

10

120521

510

120769

515

120799

163

120930

500

XL

AN3C5A Purchased No

270 Each

1,010.000 4 4

AN3C5A

Bolt

**

yl 12/04/10

Location

Loc Qty

Loc Code

FP001

7

115835

7

ST350

1003

116419

28

117343

13

117764

7

117872

2

119749

23

120423

930

XL

AN960C10L NAS1149C0332 Purchased No

270 Each

0.0000 10 10

***AN960C10I ***

washer

**

11121255 yl 12/04/10 (x10)

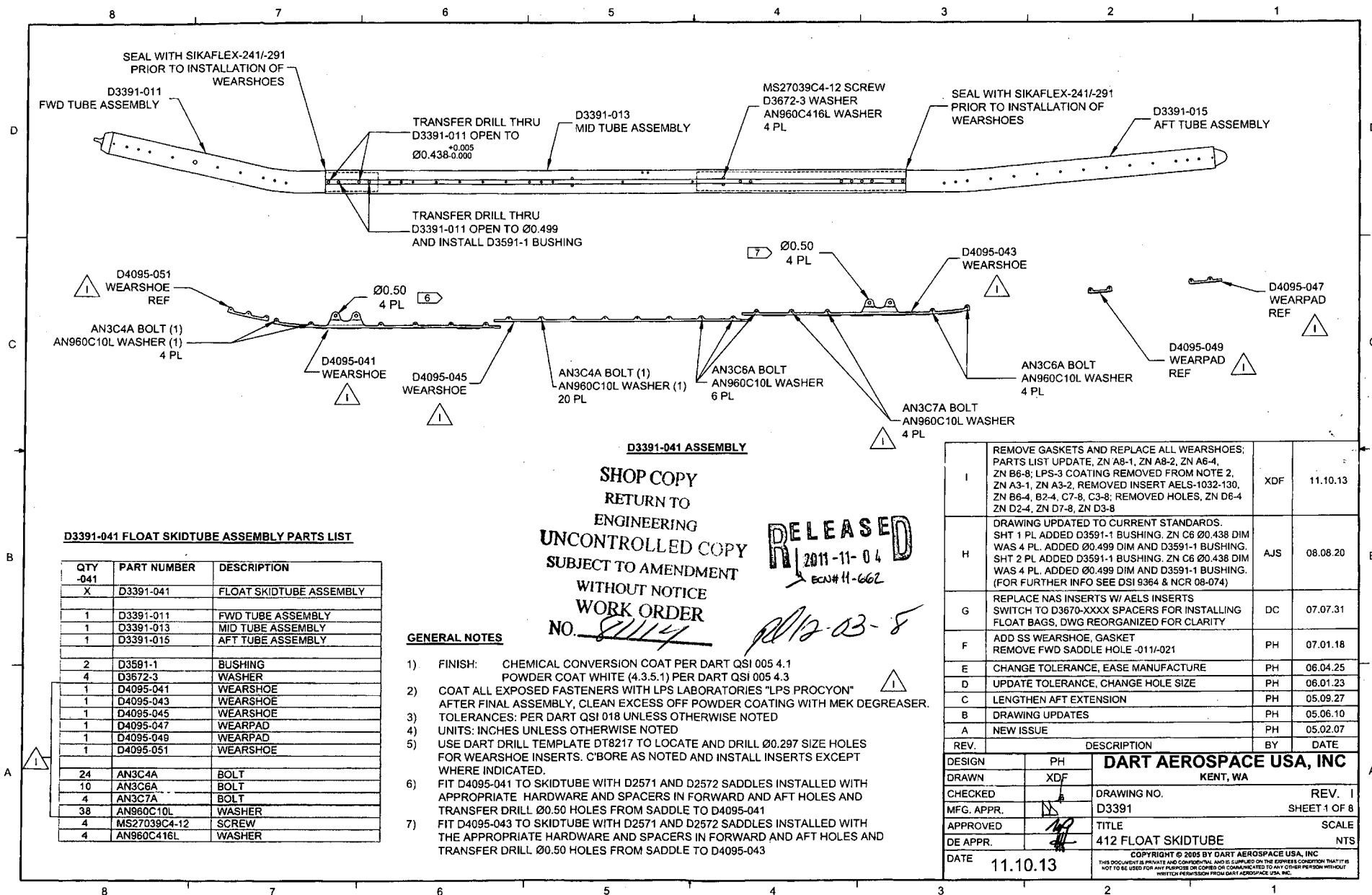
Dart Aerospace Ltd

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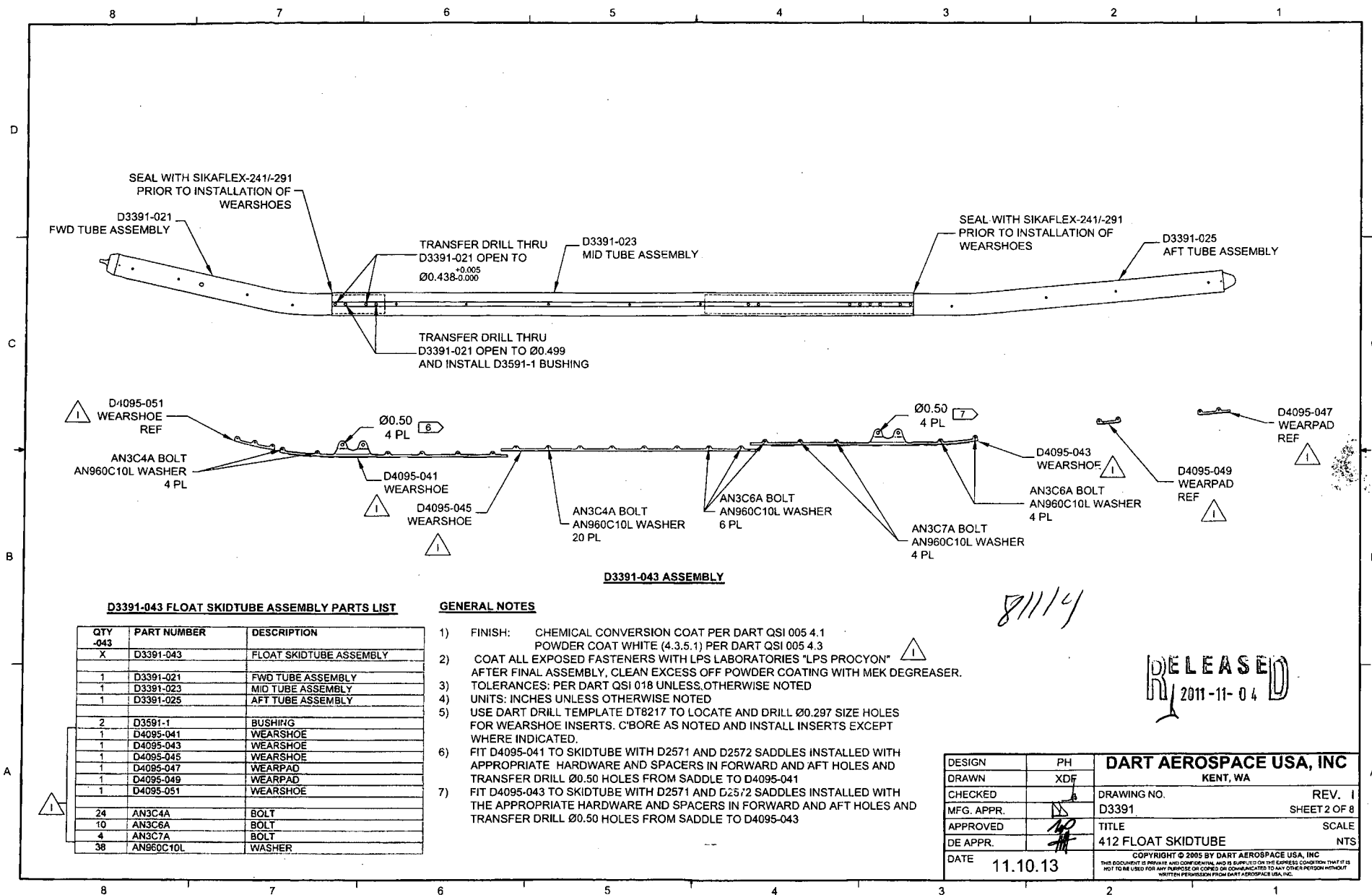
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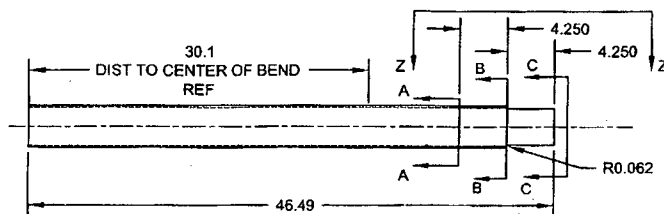
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

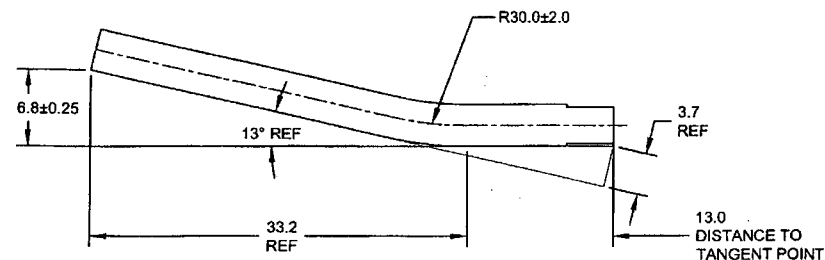
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

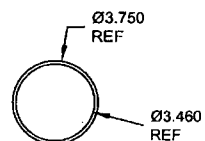
NOTE: Date & initial all entries



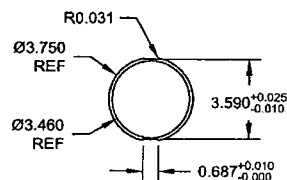
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



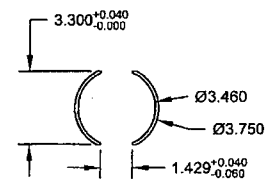
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



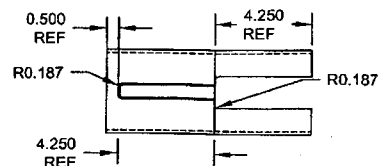
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

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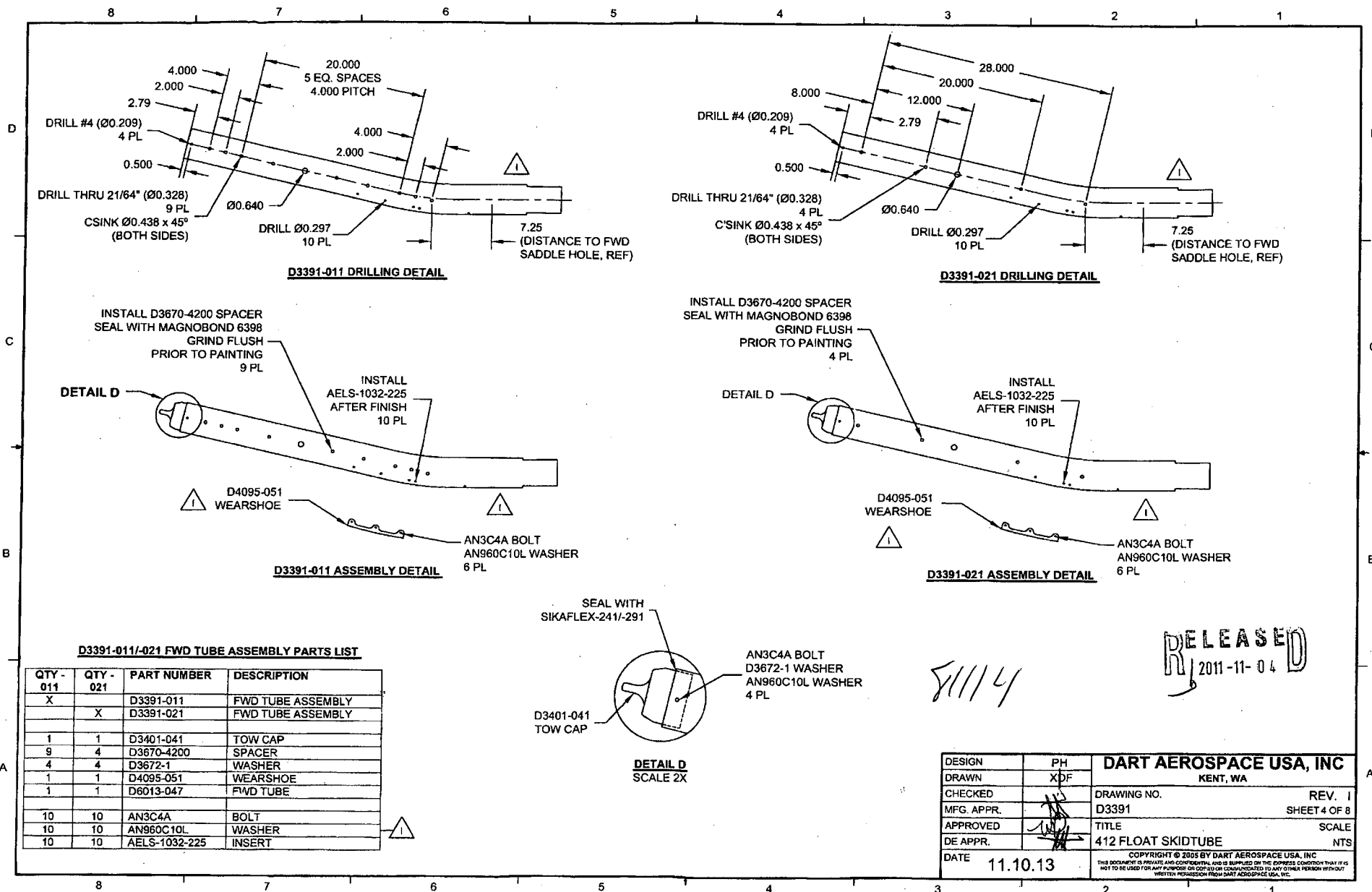
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

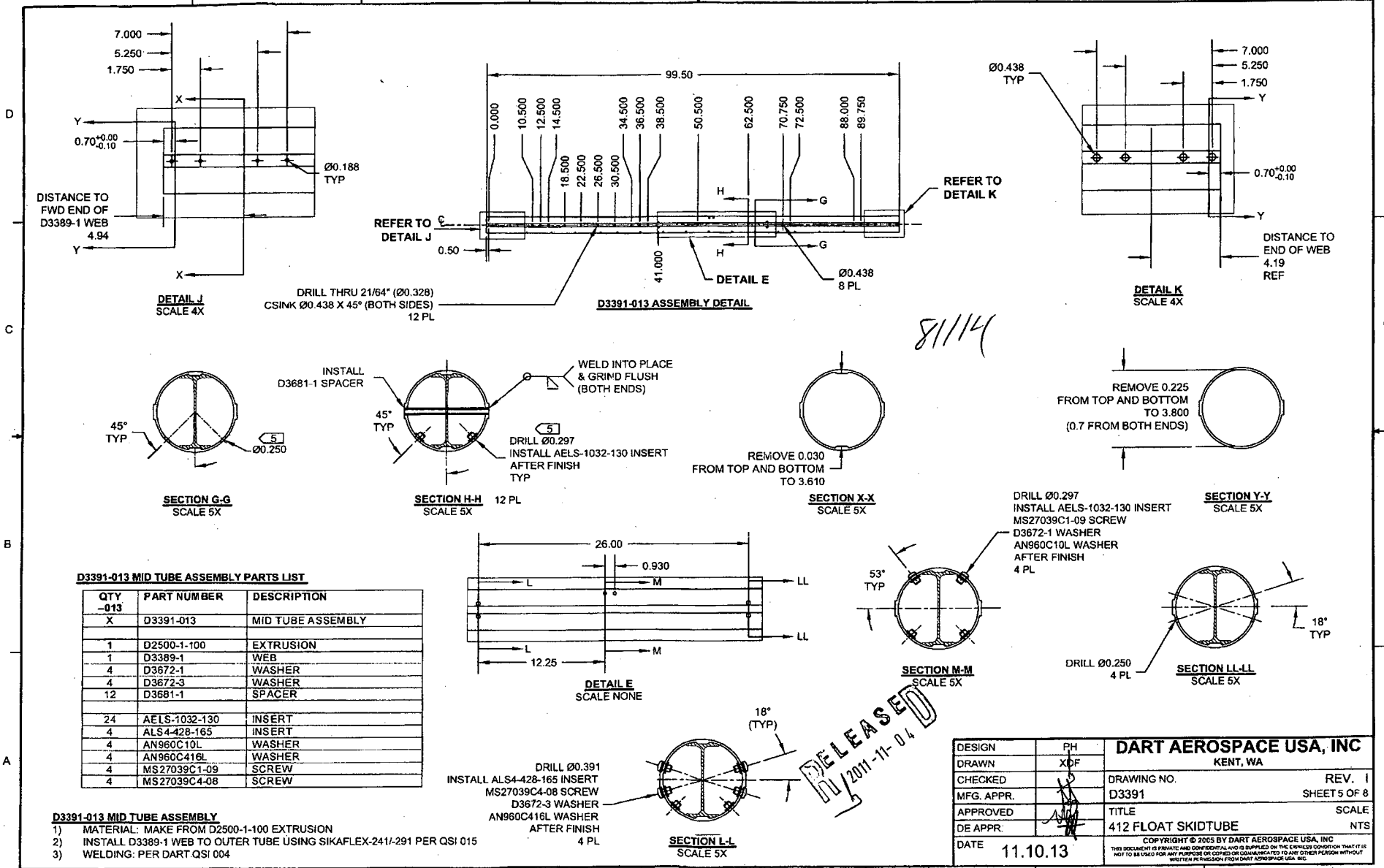
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8 7 6 5 4 3 2 1



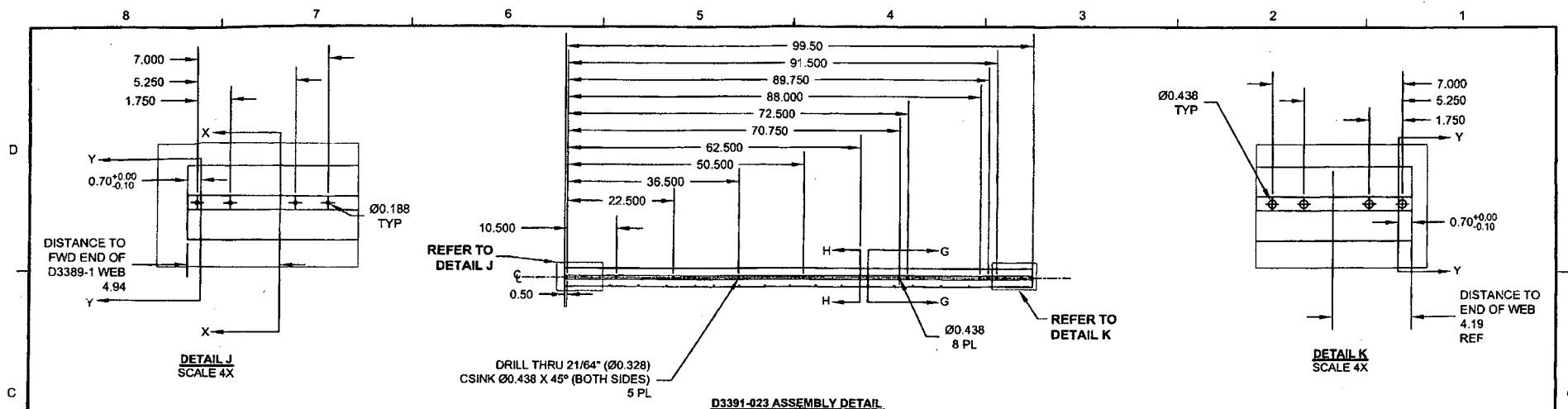
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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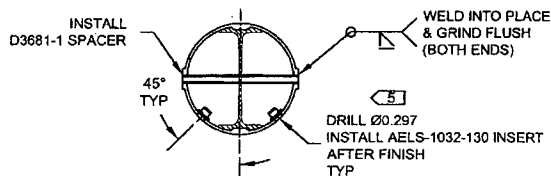
NOTE: Date & initial all entries



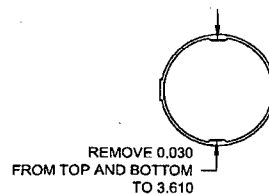
8/11/14



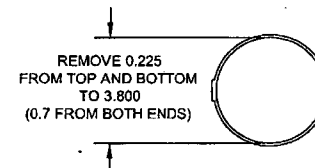
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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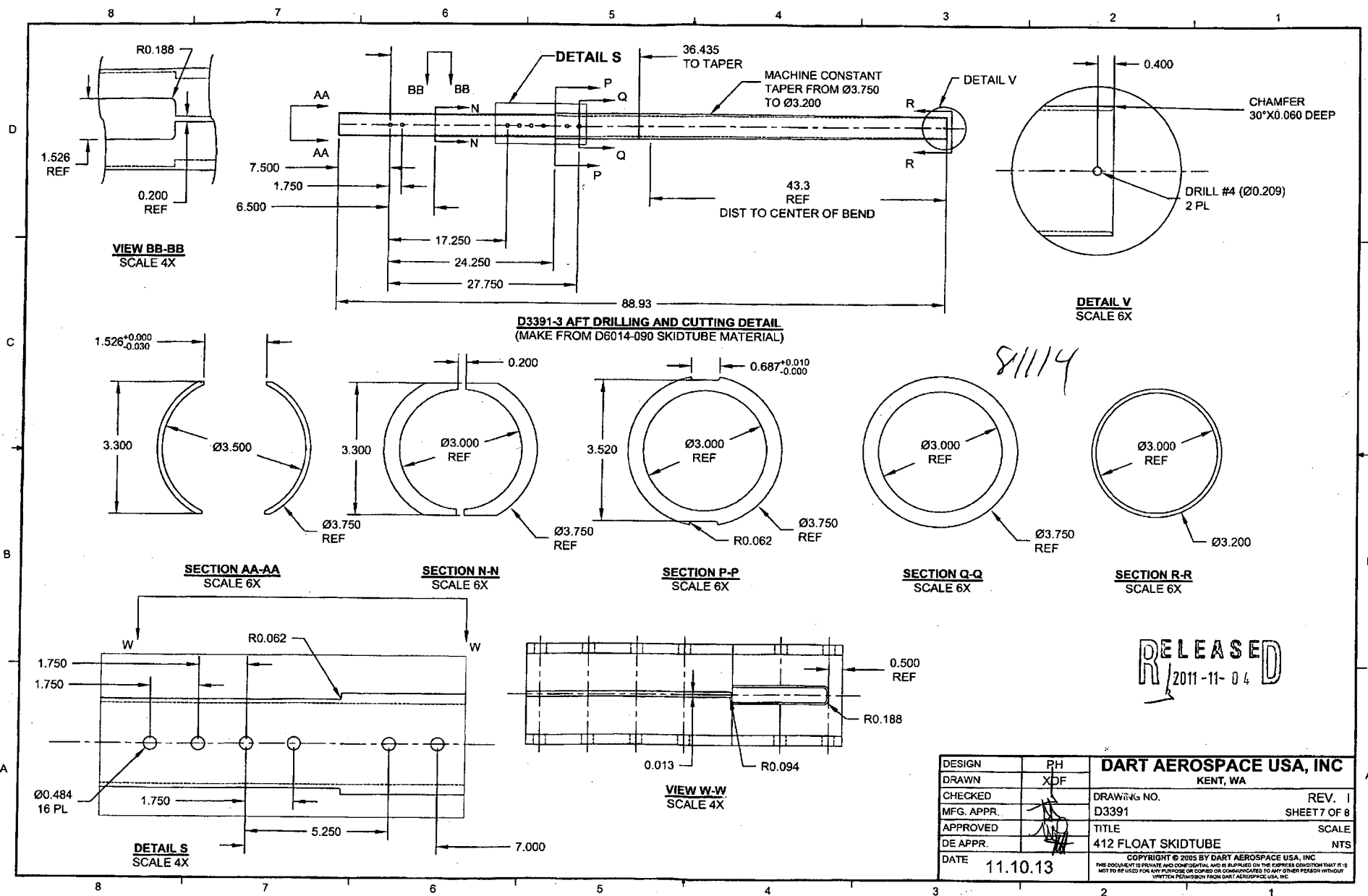
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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	81114
Description: Float Skidtube (412)		Part Number:	D3391-3
Inspection Dwg: D3391	Rev: H <i>[Signature]</i>	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010	14.000	✓		tape	mm L-02
3.500	+/-0.010	3.499	✓		vern	conv-08
88.93	+/-0.030	88.93	✓		tape	mm L-02
Ø3.200	+/-0.010	3.200	✓		vern	conv-08
88.93	+/-0.030	88.93	✓		tape	mm L-02
Ø3.750	+/-0.010	3.75	✓		vern	conv-08
30° x 160" chamfer	+/-0.010	30° x 160"	✓		✓	

Measured by: <i>mm L</i>	Date: 12/03/16
Audited by: <i>[Signature]</i>	Date: 12/03/16

HAAS Section						
1.526	+0.000/-0.030	1.505	✓		Caliper	BL 06
7.500	+/-0.010	7.500	✓			"
27.750	+/-0.010	27.750	✓		tape	BL 09
31.750	+/-0.010	31.750	✓			"
35.250	+/-0.010	35.250	✓			"
3.300	+/-0.010	3.300	✓			BL 06
0.200	+/-0.010	.195	✓			
3.520	+/-0.010	3.522	✓			
0.687	+0.010/-0.000	.687	✓			
R0.062	+/-0.010	.062	✓			
Ø0.484	+0.005/-0.001	.484	✓			

Measured by: <i>BL</i>	Date: 12/03/16
Audited by: <i>DA</i>	Date: 12/03/16

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	
H	11.06.21	Dimension 44.995 removed	KJ	<i>[Signature]</i>

W/O:		WORK ORDER CHANGES					
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